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# PATENT COOPERATION TREATY

1/12 10/594 510 23

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From the  
INTERNATIONAL SEARCHING AUTHORITY

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To:

see form PCT/ISA/220

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WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY  
(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/IB2005/000850

International filing date (day/month/year)  
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International Patent Classification (IPC) or both national classification and IPC  
A01N59/02, C07C309/62

Applicant  
HARVESTTECH ENTERPRISES, LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, Inventive step and Industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, Inventive step or Industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/IB2005/000850

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

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PCT/IB2005/000850

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	1-10,12,13,16-20,25
	No: Claims	
Inventive step (IS)	Yes: Claims	22-24,26
	No: Claims	1-21,25
Industrial applicability (IA)	Yes: Claims	1-26
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**Re Item V.**

Reference is made to the following documents:

D1 : US 3 918 983 A (PAPALOS ET AL) (1975-11-11)

D2 : WO 00/64867 A (CONDEA VISTA COMPANY) (2000-11-2)

D3 : DATABASE WPI Week 200033 Derwent Publications Ltd., London, GB; AN 2000-376964 XP002349476 "Multifunction animal and plant growth-promoting agent - increases drought, cold and disease resistance of plants and improves growth in animals" & CN 1 237 345 A ((LIYY-I) LI Y) 8 December 1999 (1999-12-08)

The present application is directed to a process for preparing water-soluble sulphur containing oil (claim 1), a fungicidal water-soluble sulfur-containing oil (claim 16), a method for controlling or killing plant pathogens (claim 22) or stimulating plant's uptake of nutrients from the soil (claim 25) or adjusting the soil pH comprising treating the plant or the soil (claim 26) with said oil.

The expression "water-soluble" is vague and does not correspond to an exact numerical value, such as the solubility expressed in (g/l). It is common knowledge that a sulfonated oil has an increased water solubility over the non-sulphonated oil. Therefore, any sulphonated oil is at least in part water soluble. Therefore, it is not possible to distinguish from the claimed process or the sulfur-containing oils from the disclosures of the prior art.

**INDEPENDENT CLAIMS**

**Claim 1**

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

D1 discloses a process for preparing sulfated oils, such as castor oil (column 1, lines 14-30), mustard oil or peanut oil (see examples I and II) comprising the steps of reacting the oil with 30 parts by weight of 98% sulfuric acid at a temperature between 10°C and 30°C for 2 hours, neutralizing the product with 50% NaOH. The product is miscible with water at 10%. Although D1 does not disclose that about 30% of the sulphur reactive sites have reacted with the sulphuric acid, the time of reaction in D1 is the same as in the experiments on file (see p.11, par.59). Therefore, D1 anticipates the process of independent claim 1.

D2 (p.4) discloses a process for producing and recovering sulfonated internal olefines comprising the steps of sulfonating a blend of olefines with sulfur trioxide at a temperature between 10°C and 30°C and neutralizing the product with a basic material. According to p. 8, lines 20-28, the sulfonated product contains very little free oil. Therefore, D2 anticipates the process of independent claim 1.

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

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Claim 16

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 16 is not new in the sense of Article 33(2) PCT.

The sulfated oils obtained by the process described in D1 (example I and example II) and D2 (p.8, lines 11-23) take away the novelty of claim 16.

The oil in claim 16 is defined as "product by process". However, a known product is not rendered novel merely by the fact that it is produced by a novel and inventive process. Sulfated oils are known for example from D3 (see abstract - sulfated castor oil known as Turkey-red oil). It follows that in view of D3 claim 16 is not novel.

**DEPENDENT CLAIMS**

Dependent claims 2-10, 12, 13 are anticipated by D1 and in part by D2 (Article 33(2) PCT). Dependent claims 17-20 are anticipated by D1, D2 and D3 and claim 25 is anticipated by D3, which discloses a plant growth promoting agent comprising sulfated castor oil.

Claims 11, 14 and 15 are novel, but not inventive (Article 33(3) PCT). The process of claim 11 is rendered obvious by D1, which teaches sulfating natural oils (column 2 (lines 26-40)). Claims 14 and 15 are not considered inventive, because keeping controlling the temperature during neutralization is a routine practice that does not involve an inventive step (Article 33(3) PCT).

Novelty and inventive step for claims 22-24,26 are acknowledged because none of the prior art documents discloses or suggests a method of controlling or killing plant pathogens or adjusting soil pH comprising contacting a plant or the soil with a water-soluble sulfonated or sulfated oil.